

The Size Distribution of the Postwar Business Population

THE past 5 years have witnessed the formation of a record number of new firms and the net addition of over 750,000 companies to the business population. Although conditions of high income and employment were prevalent throughout this period, there were many structural changes taking place as the economy was undergoing the transformation to peacetime production. It is of interest, in the light of these developments, to see if the balance between large and small concerns has been altered, and, in particular, whether there has been any shift in the share of activity accounted for by the leading corporations.

This article presents new data on the size breakdown of the business population for the years from 1945 to 1948, size being defined in terms of the number of paid employees in the organization. Also presented are statistics on the volume of employment in each size classification, as well as figures on the size distribution of new and discontinued businesses.

Summary

The following points provide a summary of the major findings: (1) The share of employment in the largest firm—those with 1,000 employees or more—is currently lower than it was in early 1945 in most industries, including manufacturing. (2) Though the importance of large concerns in less than in early 1945, it has increased, especially in manufacturing, since 1946—subsequent to the sharp employment cut-backs which resulted from the cessation of hostilities. (3) While it was not possible to prepare detailed estimates on a comparable basis for the prewar size distribution of employment, the available data indicate that firms with at least 1,000 workers are currently more numerous and account for a somewhat larger share of total employment than before the war. (4) The proportion of employment accounted for by an identical list of the very largest concerns seems substantially unchanged from 1940.

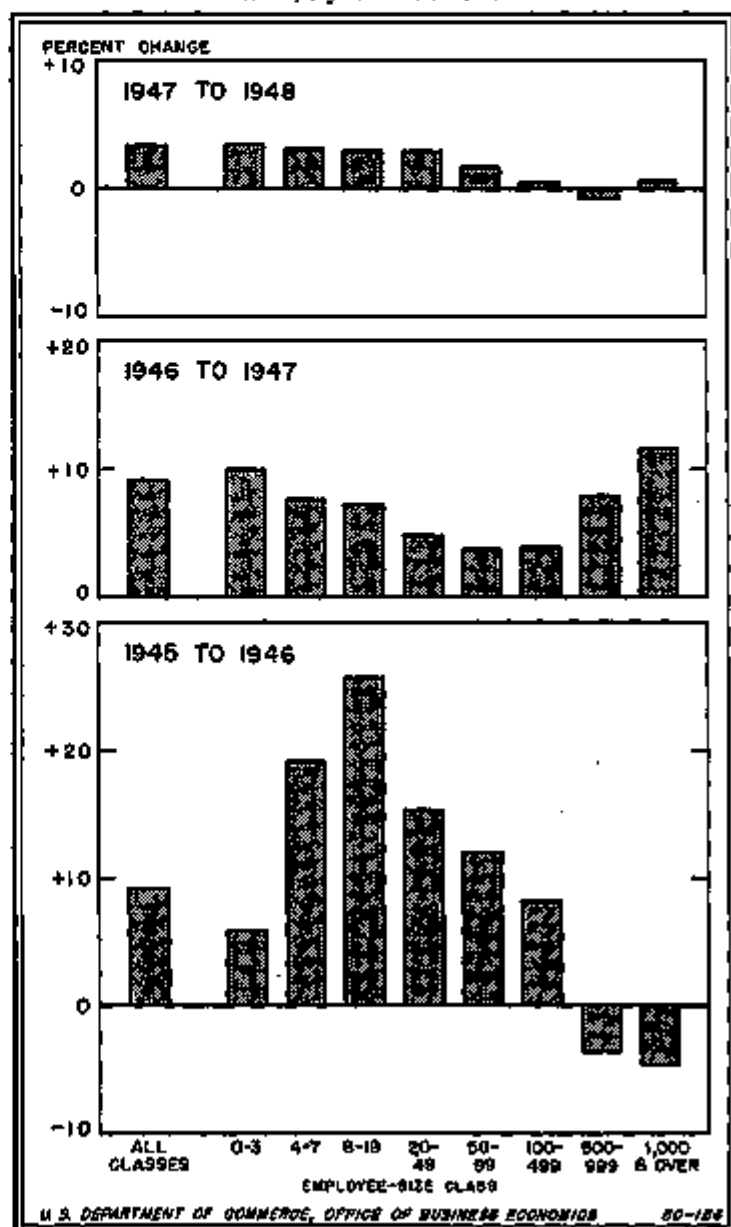
It is interesting to note that the proportions of firms in operation in the various size categories have remained unaltered—in broad outline—over the postwar period, despite the effects of business turn-over and shifts due to variations in employment. Most of the new firms started in the postwar years were extremely small. More than 85 percent of the new businesses had less than 4 employees, and of these a high proportion were without employees. However, discontinuances were similarly bunched in the bottom size classes. Birth rates, that is, new businesses relative to firms in operation, as well as death rates, were highest among the smallest organizations and showed for each year and in every industry a tapering-off as size of concern increased.

Source of data

The size estimates shown here, like the State data presented previously, were made within the framework of the revised estimates of the business population.¹ Most of the

basic data relating to the size classification of firms and new and discontinued businesses came from the Bureau of Old-Age and Survivors Insurance from records submitted by employing organizations. The industry classification of firms and their corresponding employment is based on the primary activity of the firm; for this reason the industry breakdowns shown here will differ from a breakdown accord-

Chart 1.—Percent Change in Number of Firms in Operation, by Size of Firm



Source of data: U. S. Department of Commerce, Office of Business Economics.

NOTE.—MR. FOSS AND MISS CHURCHILL ARE MEMBERS OF THE BUSINESS STRUCTURE DIVISION, OFFICE OF BUSINESS ECONOMICS.

¹ See "State Estimates of the Business Population," SURVEY, December 1949, and "Revised Estimates of the Business Population," SURVEY, June 1949.

ing to establishment. A more detailed description of sources and methods may be found in the technical notes.

It should be borne in mind that the business population represents an estimated count of legal entities; each corporation, including corporate subsidiaries, is treated as a separate unit, regardless of ownership. Many of the largest businesses classified in the top size class represent subsidiaries of larger corporate systems. A completely satisfactory picture of employment concentration would treat all firms under a common ownership as a single unit.

Paid employment as a measure of size

As already mentioned, size of firm is defined in terms of the number of paid employees in the business as of a given time period; this excludes proprietors, partners and unpaid family workers. In general, number of paid employees serves as a convenient criterion of a firm's size but it is by no means the only one—sales and total assets being two other common measures—and it has certain shortcomings which should be mentioned.

First, the particular measure used here is mid-March employment and this may give distorted results in industries subject to wide seasonal changes. For example, the relative importance and distribution of employment in contract construction, whose employment is seasonally low in March, would be especially affected in comparison to other industries. With few exceptions, however, seasonal variations in employment in the period under consideration tended to diminish under the stimulus of the heavy war and postwar demand. Second, employment understates somewhat the importance of the small concerns in which the proprietor and members of his family supply all the labor used in the business. Third, classifying firms solely by the number of employees ignores the amount of nonlabor resources used in production; firms which are "large" with respect to employment are not necessarily "large" with respect to total investment. Finally, the interpretation of changes in the share of employment in firms of a given size over long time periods must take account of the possibility of differential productivity changes among firms of different sizes.

1948 Distribution of Firms and Employment

A review of the characteristics of the size structure of the business population in early 1948, the most recent period for which detailed size data are available, serves to point up the overwhelming preponderance of very small firms in the

economy. At the end of March 1948, about three-fourths of all the concerns had less than four employees, and a high proportion of these had none. Fewer than one percent of the firms in operation had more than 100 workers and only 2,100 companies out of close to 4 million had as many as 1,000 persons on the payroll. The basic figures on number of firms in operation by size and industry are shown in table 7; percent distributions of firms for 1948 within each major industry division are presented in the left-hand section of table 1.

There are marked differences, of course, both among and within major industries, but these variations should not obscure the fact that, so far as numbers are concerned, very small firms predominate in each broad industry group while the largest concerns make up only a tiny fraction of the total. This generalization does not necessarily hold, of course, if industries are defined in very narrow terms.

As might be expected, manufacturing had the lowest proportion of firms with fewer than 4 employees but even here the percentage was close to 45. By way of contrast, services had the highest ratio of firms with fewer than 4 employees in any major industry division—83 percent—and almost 80 percent of the concerns in retail trade were in this category. Nearly 6 percent of the businesses classified in manufacturing had 100 or more workers; in retail trade, finance and services, the corresponding proportions were well under 1 percent.

By turning these distributions around, it is possible to get an idea of the relative importance of each major industry within each size class. Manufacturing firms constituted only 8 percent of all firms in the business population without regard to size but 55 percent of the concerns having at least 100 workers, and close to 60 percent of the businesses with at least 1,000. At the other extreme were retail trade and services, accounting for 43 and 21 percent of the total business population but only 11 and 8 percent, respectively, of the firms in the 100-plus group, and 11 and 3 percent in the 1,000-plus group.

Employment

Although most of the firms are embraced in the lower size classes, it is a well-known fact that in our present day economy, in which technology and mass markets have made possible large-scale production and selling, the bulk of employment is concentrated at the upper end of the size scale. In the right-hand section of table 1 are statistics on the 1948 size distribution of employment in each major industry division. The basic statistics on employment are shown in table 8.

Table 1.—Percent Distribution of Firms and Employment Within Industry Division by Size of Firm, Mar. 31, 1948

Industry division	All size classes	Firms								All size classes	Paid employment							
		0-3 employees	4-7 employees	8-19 employees	20-99 employees	100-999 employees	1,000-4,999 employees	5,000-9,999 employees	10,000 or more employees		0-3 employees	4-7 employees	8-19 employees	20-99 employees	100-999 employees	1,000-4,999 employees	5,000-9,999 employees	10,000 or more employees
All industries.....	100.0	74.5	12.8	7.8	2.1	1.0	0.7	0.1	0.1	100.0	6.0	7.1	18.8	9.9	7.3	16.7	6.3	37.7
Mining and quarrying.....	100.0	52.0	17.0	15.6	7.9	2.3	2.8	.4	.8	100.0	1.0	3.3	7.4	9.1	8.0	22.2	6.0	38.6
Contract construction.....	100.0	67.4	16.7	10.3	3.7	1.1	.6	(1)	(1)	100.0	9.4	13.0	15.7	10.0	10.3	4.9	10.1	
Manufacturing.....	100.0	44.5	15.8	12.3	11.6	6.1	4.0	.8	.5	100.0	.8	1.7	4.4	7.3	7.2	19.8	8.6	50.0
Metals and metal products.....	100.0	34.2	18.0	10.0	13.9	0.9	7.4	1.3	1.4	100.0	.4	.8	2.1	3.8	4.2	14.3	7.6	60.8
Other manufacturing.....	100.0	48.8	15.8	10.9	11.0	4.7	4.0	.5	.4	100.0	1.1	2.4	6.1	9.7	0.4	23.8	9.4	38.1
Transportation, communication and other public utilities.....	100.0	78.7	10.3	7.3	3.2	1.1	1.0	.2	.2	100.0	1.0	2.4	4.0	4.4	3.5	9.7	6.0	60.2
Wholesale trade.....	100.0	53.7	21.0	16.2	6.4	1.7	.9	(1)	(1)	100.0	7.5	11.0	19.0	19.0	11.0	10.3	4.0	10.4
Retail trade.....	100.0	78.2	13.2	6.4	1.7	.4	.2	(1)	(1)	100.0	13.9	15.2	17.8	12.0	5.9	8.4	3.0	22.8
Finance, insurance and real estate.....	100.0	82.4	9.6	5.2	1.7	.5	.4	(1)	(1)	100.0	13.0	9.0	12.1	9.9	7.3	15.7	6.6	25.7
Service industries.....	100.0	53.4	9.0	4.9	1.8	.5	.3	(1)	(1)	100.0	15.3	14.0	17.8	15.9	10.0	15.8	3.8	8.9

¹ Less than 0.05 percent.

NOTE: Distributions were computed from unrounded data. Detail will not necessarily add to totals because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics, based on data in tables 7 and 8.

Table 2.—Percent Change in Number of Firms in Operation and in Employment, Mar. 31, 1945 to Mar. 31, 1948, by Industry Division and Size of Firm

Industry division	All size classes	Firms								All size classes	Paid employment							
		0-3 employees	4-7 employees	8-19 employees	20-49 employees	50-99 employees	100-499 employees	500-999 employees	1,000 or more employees		0-3 employees	4-7 employees	8-19 employees	20-49 employees	50-99 employees	100-499 employees	500-999 employees	1,000 or more employees
All industries.....	23.2	28.6	32.4	38.7	34.3	36.1	13.6	3.2	7.0	8.8	27.9	31.2	38.5	23.5	17.2	9.1	2.4	-4.7
Mining and quarrying.....	10.0	-1.7	31.9	37.8	19.3	27.4	3.8	10.1	8.4	12.5	8.2	36.4	37.5	17.1	20.2	4.8	14.1	8.8
Contract construction.....	85.5	70.2	124.8	130.7	185.4	182.0	118.7	90.0	34.0	81.5	84.0	125.4	120.9	132.9	184.9	108.5	90.5	-5.0
Manufacturing.....	27.2	45.1	24.9	19.3	8.1	6.1	5.1	-3.4	1.4	-6.5	24.2	23.4	19.2	8.0	4.2	2.0	-4.5	-14.8
Metals and metal products.....	34.9	139.7	34.8	31.7	8.1	-2	-3	-18.1	-20.3	-35.4	32.5	32.4	20.0	8.0	-2.8	-6.5	-21.0	-30.0
Other manufacturing.....	26.0	37.0	22.9	18.8	8.1	8.3	7.4	7.3	28.1	11.2	21.8	21.0	18.5	8.8	7.7	6.8	9.1	15.7
Transportation, communication and other public utilities.....	25.9	40.6	28.5	41.2	1.0	1.1	5.9	4.2	14.0	6.8	27.0	22.5	41.7	0	.7	2.3	2.5	4.0
Wholesale trade.....	28.4	27.1	34.5	42.4	41.6	34.4	41.2	9.1	-12.4	27.1	28.0	33.9	42.0	39.5	23.8	37.3	7.1	-14.3
Retail trade.....	13.0	18.5	25.5	24.9	30.2	32.0	13.2	8.7	31.9	21.0	27.7	24.7	23.9	28.9	31.0	8.0	7.3	7.4
Finance, insurance, and real estate.....	6.7	6.8	18.5	32.4	8.4	20.1	28.4	28.0	85.9	21.8	1.8	12.7	31.7	7.5	19.8	22.3	19.5	42.8
Service industries.....	22.0	20.4	32.3	28.0	21.6	4.0	12.3	5.9	20.3	20.5	29.1	30.9	38.9	19.7	3.1	8.4	5.9	14.7

Note.—Changes were computed from unrounded data.

Source: U. S. Department of Commerce, Office of Business Economics, based on data in tables 7 and 8.

This concentration of employment among a very small number of large concerns and the sizable number of small firms with comparatively little employment is apparent in each of the major industry divisions. For the business population as a whole, the bottom 75 percent of the firms—those with fewer than four employees—accounted for 6 percent of total paid employment. In not a single major industry division did the proportion of employment in firms of this size exceed one-sixth, despite their numerical importance in such industries as retail trade, finance, and services. It should be borne in mind, however, that proprietors and family workers, whose employment is not counted here, are the most important source of labor in small retail and service businesses.

Table 3.—Year-to-Year Changes in Number of Operating Firms by Size of Firm and Source of Change

Period and source of change	All size classes	Number of firms with—		
		0-3 employees	4-19 employees	20 or more employees
March 1946-48.....	297	145	131	21
From excess of births.....	297	256	30	3
From shifts in size.....		-111	92	19
March 1946-47.....	324	209	80	8
From excess of births.....	324	253	42	2
From shifts in size.....		-20	14	6
March 1947-48.....	127	99	24	4
From excess of births.....	127	111	17	-1
From shifts in size.....		-12	7	5

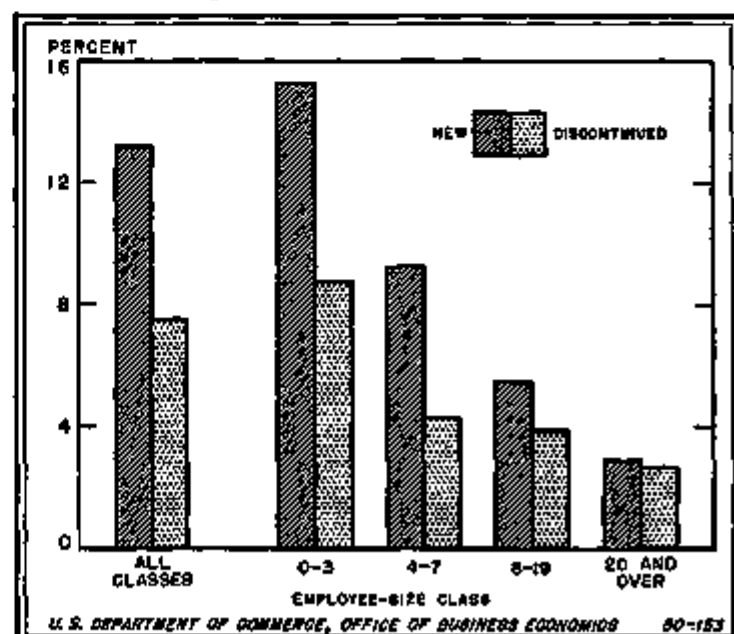
Source: U. S. Department of Commerce, Office of Business Economics.

On the other hand, the top 3,100 concerns, or one-tenth of 1 percent of the firms—those with at least 1,000 workers—gave employment to 38 percent of all employees covered in the business population universe; the top 1 percent—firms with at least 100 employees—accounted for 60 percent of the employment. There were about 225 concerns as of early 1948 that had as many as 10,000 employees; they represented an even smaller number of parent companies and accounted for 18 percent of all the employees. Moreover, if all firms under the same ownership as these 225 companies were combined, they would account for a significantly higher proportion of employment.

The transportation, communication and other public utility group had the largest proportion of employment in the 1,000-plus class—almost 70 percent—followed by manufacturing with 50 percent and mining with 36 percent. The concentration of employment in this top size category in

manufacturing was heavily weighted by the metals industries where the largest 800 concerns—those with at least 1,000 employees—accounted for 67 percent of the employment. In all other manufacturing, the corresponding proportion was 38 percent.

By and large, the 1948 distribution of firms by size was not substantially different from the distribution early in 1945, even though 1.5 million new concerns were established over this period, 750,000 were liquidated and many existing firms as well as new firms underwent changes in size. The relative importance of the bottom size group dropped from 76.1 to 74.5 percent but most of this loss was picked up by the next 3-size categories—firms averaging 4 to 49 employees—as the smaller firms shifted into larger size classes. As may be seen in table 2, the number of firms in all size classes above 50 rose less than average, especially those with 500 or more employees.

Chart 2.—Ratio of Number of New and Discontinued Businesses to Firms in Operation, by Size of Firm, 1945-48 Average¹¹ Number of new and discontinued businesses are annual averages; firms in operation are as of March 31.

Source of data: U. S. Department of Commerce, Office of Business Economics.

Changes are more apparent when each industry is considered separately. Thus, the proportion of very small firms in manufacturing rose from 39 to 45 percent in this 3-year period; in metals and metal products, the rise was from 19 to 34 percent of the total. Manufacturing is the one major industry whose population has undergone a marked decline since early 1948, the current level being not much higher than it was in early 1946. An important reason for this large drop can be traced to the earlier marked increase in the number of very small firms, whose ability to survive was especially dependent on the pent-up demands of the prior years.

Year-to-year changes

Year-to-year changes in the number of operating firms by size, illustrated in chart 1, mirror many of the basic features of the postwar reconversion which are obscured in the single 1945-48 comparison. The bottom panel highlights the decline among the largest firms in the period immediately after the war, at a time when the number of firms in the smaller size class was expanding. The middle panel emphasizes the widespread increases throughout the size structure as the tempo of reconversion was accelerating, and highlights the recovery of the top size classes. The upper panel, covering the period ending in March 1948, stresses the general pattern of diminished growth in the business population as it came more nearly into balance relative to the general level of business activity.

Effect of turnover and shifting

One point brought out by chart 1 is that firms with fewer than four employees rose less than average between 1945 and 1946 but more than average the following year. This differential behavior may serve to illustrate the role played by births and deaths, on the one hand, and by shifts due to employment increases on the other, on changes in the number of firms in the various size classes.

In table 3 it may be seen that the number of firms having less than 4 workers rose by 145,000 between 1945 and 1946 although the number of new firms of this size exceeded discontinuances by 256,000. The difference is accounted for by the net outflow of 111,000 firms into larger size classes. It may also be noted that in the two other size classes shown in the table, additions of this nature were more important than changes due to an excess of births over discontinuances.

Nineteen hundred and forty-five and early 1946 were especially favorable for the growth of very small businesses. Veterans were returning to the labor market in sizable numbers while large concerns were still releasing workers from war jobs. Essentially this was the period when existing small enterprises were able to recoup their wartime employment losses and newly established small businesses were particularly able to expand their initial employment to meet the rising tide of pent-up demand.²

The smallest firms also enjoyed an expansion in employment in the following year but it was dampened by the resurgence of the large concerns, especially in manufacturing. It is clear from table 3 that upward shifting in the size scale was considerably reduced after early 1946.

New and Discontinued Businesses

Certain aspects of births and deaths have already been discussed in connection with changes in the number of operating firms but there are other points relating to business turnover which merit additional consideration. First, it may be pointed out that both business births and deaths during the postwar years were even more concentrated in the smaller size classes than firms in operation. Of the

roughly 2 million new businesses which were established in the calendar years 1945-48, 87 percent were firms with 0 to 3 employees; the proportion of total discontinuances in this size class was approximately the same.

Throughout this period only 1 or 2 percent of all new and discontinued firms had 20 or more employees, although the proportion of firms in existence with 20 or more employees was about 5 percent. The number of new large concerns was small; there were fewer than 200 firms started between the second quarter of 1945 and the third quarter of 1949 whose employment was 250 or more, and the bulk of these had fewer than 500 persons on the payroll.³ Data on the number of new and discontinued businesses are presented in table 4.

Stability in birth and death distributions

A second feature of the births and deaths is the stability of their percentage-size distributions over the 1945-48 period even though in the aggregate the number of births declined by over one-third between 1946 and 1948 while the number of deaths increased by almost two-thirds over the same years. There is no evidence of any appreciable change in the distributions of discontinuances and new firms during the first half of 1949 when the business population was declining.

Table 4.—Number of New and Discontinued Businesses by Industry Division and by Size of Firm, 1945-48

Industry division and size class	New businesses				Discontinued businesses			
	(Thousands)							
	1945	1946	1947	1948	1945	1946	1947	1948
All industries.....	428.8	419.8	472.8	354.6	262.6	226.4	291.8	373.6
0-3 employees.....	376.3	383.6	403.1	339.8	177.6	157.0	250.0	320.3
4-7 employees.....	35.0	26.5	43.4	37.7	13.1	16.0	23.0	27.0
8-19 employees.....	12.2	20.9	15.4	12.8	7.8	2.1	12.2	14.2
20 or more employees.....	5.3	7.1	4.9	4.3	4.3	4.3	5.6	5.7
Mining and quarrying.....	4.0	5.0	5.8	6.9	2.7	3.2	4.9	5.1
0-3 employees.....	2.4	3.0	2.7	3.2	1.7	2.3	2.9	3.8
4-7 employees.....	.8	1.2	1.4	1.6	.4	.4	.6	.7
8-19 employees.....	.5	.6	.3	.8	.3	.3	.4	.6
20 or more employees.....	.2	.2	.2	.2	.2	.2	.3	.2
Contract construction.....	55.0	74.9	74.3	64.8	18.1	26.6	35.5	45.1
0-3 employees.....	47.3	78.1	60.7	43.2	15.5	22.1	29.0	38.4
4-7 employees.....	6.3	12.1	10.0	6.6	1.3	2.6	4.5	6.0
8-19 employees.....	1.7	3.5	2.8	2.2	.8	1.4	2.2	2.8
20 or more employees.....	.6	1.1	.8	.7	.4	.5	.8	.9
Manufacturing.....	28.3	78.7	49.8	39.7	28.7	29.3	45.1	49.7
0-3 employees.....	28.5	52.5	38.2	29.0	30.9	22.8	31.3	35.8
4-7 employees.....	8.1	13.5	8.2	6.4	3.2	2.7	4.2	4.4
8-19 employees.....	4.4	7.9	3.8	3.0	2.0	2.1	3.3	3.4
20 or more employees.....	2.3	3.1	2.6	1.3	1.6	2.6	2.8	2.3
Transportation, communication, and other public utilities.....	27.9	40.4	28.4	23.2	11.1	14.8	17.2	19.7
0-3 employees.....	26.0	38.5	26.3	21.5	8.9	12.0	15.5	18.0
4-7 employees.....	1.4	3.2	1.6	1.2	.6	.7	.9	1.0
8-19 employees.....	.5	.7	.4	.4	.4	.4	.5	.6
20 or more employees.....	.3	.7	.2	.1	.3	.3	.2	.2
Wholesale trade.....	32.4	31.9	31.3	18.3	7.3	8.9	14.9	16.1
0-3 employees.....	19.1	26.5	19.5	16.2	6.1	7.3	10.5	13.1
4-7 employees.....	2.3	3.8	2.7	2.1	.7	.9	1.6	1.7
8-19 employees.....	.7	1.1	.8	.9	.4	.6	.7	.8
20 or more employees.....	.3	.3	.8	.2	.3	.2	.3	.4
Retail trade.....	158.1	218.4	183.2	126.9	75.6	79.1	102.7	141.7
0-3 employees.....	138.0	193.5	153.0	101.1	66.9	70.0	90.9	126.8
4-7 employees.....	8.7	14.9	11.7	10.1	5.3	6.6	7.8	9.4
8-19 employees.....	2.7	4.9	3.6	2.9	2.6	2.7	3.2	4.0
20 or more employees.....	.8	1.0	.9	.8	.8	.8	.9	.9
Finance, insurance and real estate.....	25.3	24.7	29.9	18.3	13.8	14.1	16.3	18.9
0-3 employees.....	23.0	24.1	17.8	16.4	13.1	13.0	14.5	16.4
4-7 employees.....	1.3	1.6	1.4	1.3	.5	.8	.9	1.1
8-19 employees.....	.4	.6	.6	.4	.2	.3	.4	.4
20 or more employees.....	.1	.3	.2	.2	.1	.1	.2	.2
Service industries.....	35.8	128.3	102.8	84.4	66.4	51.2	60.9	73.9
0-3 employees.....	39.5	115.3	92.0	74.9	42.6	45.0	55.7	72.0
4-7 employees.....	4.1	8.7	8.6	6.6	6.4	2.6	5.1	2.9
8-19 employees.....	1.3	2.4	2.7	2.4	1.1	1.3	1.5	1.9
20 or more employees.....	.7	.9	.7	.7	.6	.6	.6	.7

Note.—Detail will not necessarily add to totals because of rounding.

Sources: U. S. Department of Commerce, Office of Business Economics, based primarily on data from the Social Security Administration, Bureau of Old-Age and Survivors Insurance.

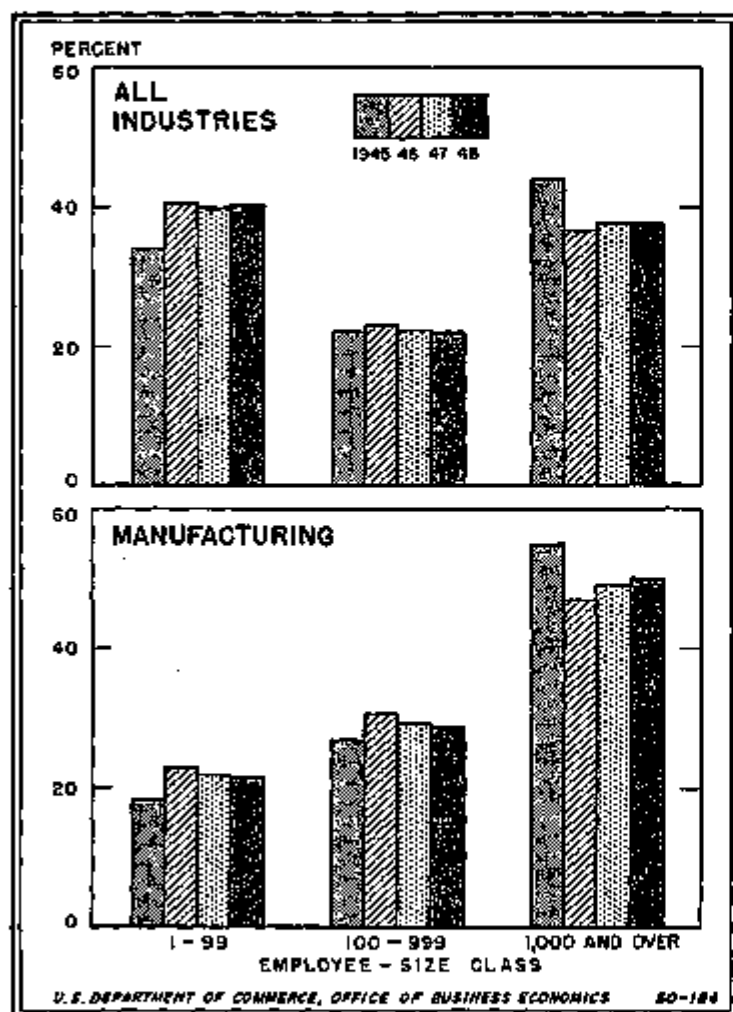
² It should be pointed out that data on business turnover are prepared on a more current basis and in somewhat greater detail than are shown in the tables.

³ See, for example, "Sales and Inventory Trends of New Trade Firms," Survey, April 1949.

Birth and death rates

Chart 2 shows the ratio of the number of new and discontinued businesses during the year to the number of firms in existence as of March 31, on an average basis for the years 1945-48. Over this period, the annual rate of new-business formation averaged a little over 13 percent for all size classes combined. The chart shows the highest rate in the smallest-size class and displays a rapid tapering-off thereafter. Discontinuance ratios show the same general behavior by size class—reflecting with some lag the pattern of births—except that the spread between the less-than-4 group and 20-and-over group is less pronounced than in the case of the new firms rates. Annual data on entry and discontinuance rates by major industry and size class are presented in table 5.

Chart 3.—Percent Distribution of Employment, by Size of Firm, All Industries and Manufacturing



Source of data: U. S. Department of Commerce, Office of Business Economics.

There are a number of reasons to expect higher new firm ratios in the small size groups than in the larger groups. For example, the larger the size of the prospective business, the greater the initial investment requirements. In addition, the prospective entrepreneur is more likely to be forced to find outside sources to supplement his own funds for financing his initial capital outlays.

Birth rates by industry

It may be noted that industrial comparisons of birth rates are generally improved when the size distribution of new and existing firms within industries is taken into account. This may be illustrated by a comparison between the birth rates

of manufacturing and transportation. On an over-all basis there is comparatively little difference between the two ratios in each of the years from 1945 to 1948. Size class for size class, however, the ratios in manufacturing are substantially in excess of those in the transportation group, being about one-third higher in the 0-3 category and approximately twice as great in the succeeding size groups.

Postwar Changes in Size Distribution of Employment

The 1948 distribution of employment among the various size classes, in contrast to the distribution of firms, represents an alteration in many respects of the pattern which existed just before the end of the war in 1945. Obviously, a small change in the number of giant concerns can have only an insignificant effect on the distribution of firms but may bring about significant shifts in the distribution of employment. Much attention has been focused on this problem recently because the particular industries most stimulated by the war production program were those characterized by very large scale manufacturing enterprises, and the question has naturally arisen as to what has happened since the war to the share of activity accounted for by large companies. The remainder of this article is devoted to a description of the changes in the relative shares of employment among the size classes.

Employment in largest concerns lower than in 1945

Employment changes over the 3-year period ending in March 1948, by major industry division and size class, are summarized in the right-hand section of table 2. One point which stands out is that the relative gain in over-all employment was only 8 percent, in contrast to the rise of almost one-fourth in the number of operating firms. The chief reason for this may be found in the reduced volume of employment in the top size class. In addition, however, it should be remembered that many of the firms added to the business population had no paid employees while the bulk of the new employers had only one to three employees.

Chart 3 illustrates the changing shares of employment in three broad size classes for all industries and for manufacturing. If the change from 1945 to 1948 is considered, it may be seen that the proportion of employment among firms with 1,000 or more employees decreased from 44 to 38 percent. It was approximately unchanged for the groups with 100 to 999 workers and increased among firms with fewer than 100 employees.

Trend reversed after early 1946

It is obvious from chart 3, however, that the entire decline in importance of the largest companies occurred immediately after the war. In manufacturing, for example, the share of employment in the 1,000-plus group between 1945 and 1946 dropped from 55 to 47 percent; in metals, from 73 to 64 percent. Since 1946 this movement has been reversed, though the share of the top group leveled off between 1947 and 1948 for all industries combined but continued to rise in manufacturing. Table 6 presents the changing proportions of employment in the top size class by detailed size groups and by major industry divisions.

Firm growth and changes in concentration

It should be fairly clear that changes in the relative shares of employment among the largest concerns over this period reflected only in part the expansion in the business population and the added employment brought about by this growth. In an industry whose employment is highly concentrated, the appearance of new firms can have relatively

little effect on the employment distribution unless the new businesses are of large size. In metal manufacturing, for example, the number of firms rose by one-sixth between 1945 and 1948 but most of the concerns were extremely small and had little to do with the lower share of employment in the top size class. It may also be noted that in the transportation group the top size class accounted for about 69 percent of the employment in all 4 years despite the addition of 50,000 firms.

It is where concentration is not so pronounced that the addition of new firms has the effect of appreciably reducing the proportion of employment in the top size class. In retail trade and services the importance of each of the classes with 100 or more employees has decreased. And in this respect it is of interest to note that the finance, insurance and real estate industry, whose population has grown least over this period, is the one major industry division where the share of employment in the top size class has shown a pronounced increase.

Developments since 1948

Employment statistics by size of firm are not generally available since March 1948. It would appear, however, that in manufacturing, the small decline in output which has occurred over the past 2 years has been accompanied by a continued increase in the relative importance of the top firms. This is suggested by two pieces of information.

Table 5.—Entry and Discontinuance Rates¹ by Industry Division and Size of Firm, 1945-48

Industry division and size class	Entry rate				Discontinuance rate			
	1945	1946	1947	1948	1945	1946	1947	1948
All industries:								
0-3 employees.....	134	174	132	89	63	64	74	94
4-7 employees.....	185	206	143	118	72	78	88	111
8-19 employees.....	80	124	89	78	34	35	48	53
20 or more employees.....	85	74	51	41	35	32	41	40
Mining and quarrying:								
0-3 employees.....	33	38	25	22	20	24	29	20
4-7 employees.....	139	187	151	171	118	95	120	145
8-19 employees.....	120	108	142	179	149	125	152	200
20 or more employees.....	265	247	373	277	91	78	103	115
Contract construction:								
0-3 employees.....	121	145	108	163	87	74	88	87
4-7 employees.....	45	40	44	42	46	42	42	34
8-19 employees.....	332	415	265	287	197	146	130	164
20 or more employees.....	382	514	317	253	125	145	133	173
Manufacturing:								
0-3 employees.....	212	319	221	155	68	68	70	86
4-7 employees.....	123	141	95	68	54	50	70	54
8-19 employees.....	87	83	56	42	51	41	50	54
20 or more employees.....	156	263	161	151	100	100	134	151
Wholesale trade:								
0-3 employees.....	324	441	244	198	207	190	211	271
4-7 employees.....	194	300	160	123	44	58	82	84
8-19 employees.....	92	132	66	64	43	40	58	60
20 or more employees.....	33	43	23	18	24	22	31	29
Retail trade:								
0-3 employees.....	164	140	103	82	52	61	62	83
4-7 employees.....	120	164	110	95	58	59	71	95
8-19 employees.....	40	71	53	45	20	20	35	42
20 or more employees.....	33	49	34	27	33	30	36	37
Finance, insurance, and real estate:								
0-3 employees.....	78	86	58	53	43	43	47	52
4-7 employees.....	87	87	63	67	48	47	62	37
8-19 employees.....	40	57	42	39	16	19	27	33
20 or more employees.....	27	35	28	23	15	19	21	20
Service industries:								
0-3 employees.....	137	179	123	80	66	68	74	93
4-7 employees.....	182	189	134	105	72	75	81	102
8-19 employees.....	70	84	80	83	37	37	41	40
20 or more employees.....	42	82	67	58	37	35	38	44
Transportation, communication, and other public utilities:								
0-3 employees.....	283	234	159	124	81	91	94	100
4-7 employees.....	253	315	183	150	97	110	114	126
8-19 employees.....	92	126	64	60	37	41	50	54
20 or more employees.....	43	52	32	27	42	33	37	38
Wholesale trade:								
0-3 employees.....	28	29	16	13	21	25	10	22
4-7 employees.....	145	161	120	91	48	51	69	80
8-19 employees.....	213	287	188	148	68	79	101	121
20 or more employees.....	72	101	64	50	22	24	40	41
Retail trade:								
0-3 employees.....	33	37	26	18	15	17	23	20
4-7 employees.....	21	19	16	8	13	12	17	22
Finance, insurance, and real estate:								
0-3 employees.....	104	140	103	82	52	61	62	83
4-7 employees.....	120	164	110	95	58	59	71	95
8-19 employees.....	40	71	53	45	20	20	35	42
20 or more employees.....	33	49	34	27	33	30	36	37
Service industries:								
0-3 employees.....	78	86	58	53	43	43	47	52
4-7 employees.....	87	87	63	67	48	47	62	37
8-19 employees.....	40	57	42	39	16	19	27	33
20 or more employees.....	27	35	28	23	15	19	21	20
Transportation, communication, and other public utilities:								
0-3 employees.....	15	22	21	20	11	15	20	21
4-7 employees.....	137	179	123	80	66	68	74	93
8-19 employees.....	182	189	134	105	72	75	81	102
20 or more employees.....	70	84	80	83	37	37	41	40
Finance, insurance, and real estate:								
0-3 employees.....	42	82	67	58	37	35	38	44
4-7 employees.....	34	42	34	32	28	28	35	30

¹ Number of new and discontinued firms each calendar year per 1,000 firms in operation Mar. 31.

Source: U. S. Department of Commerce, Office of Business Economics, based on data in tables 4 and 7.

Table 6.—Percent Distribution of Employment by Industry Division and Size of Firm, 1945-48

Industry division and year	All size classes	Firms with—						
		0-3 employees	4-7 employees	8-19 employees	20-49 employees	50-99 employees	100-499 employees	500-999 employees
All industries:								
1945.....	100.0	5.1	5.8	7.6	8.7	0.7	15.5	6.0
1946.....	100.0	5.2	7.1	10.0	10.1	7.0	13.8	6.0
1947.....	100.0	5.0	7.0	9.0	9.8	7.3	13.0	6.4
1948.....	100.0	4.0	7.1	10.0	9.9	7.2	16.7	6.3
Mining and quarrying:								
1945.....	100.0	2.0	2.0	0.0	8.6	7.0	23.1	0.8
1946.....	100.0	1.0	3.1	0.8	0.4	7.8	23.9	0.8
1947.....	100.0	1.0	3.1	0.7	8.8	7.0	23.9	0.8
1948.....	100.0	1.0	3.3	7.4	0.1	8.0	23.2	0.9
Contract construction:								
1945.....	100.0	0.0	11.1	16.6	13.0	0.0	13.1	4.0
1946.....	100.0	0.3	13.3	20.3	18.4	11.3	13.3	3.3
1947.....	100.0	0.5	12.7	18.6	16.6	10.7	17.1	4.7
1948.....	100.0	0.5	13.0	18.7	16.6	10.0	16.3	4.9
Manufacturing:								
1945.....	100.0	1.0	1.3	3.5	0.4	0.5	18.3	8.5
1946.....	100.0	1.3	1.7	4.5	7.8	7.0	23.9	0.0
1947.....	100.0	1.3	1.7	4.5	7.4	7.4	20.3	0.0
1948.....	100.0	1.0	1.7	4.4	7.3	7.3	19.8	0.0
Metal and metal products:								
1945.....	100.0	1.2	1.4	1.4	2.8	3.3	11.5	7.4
1946.....	100.0	1.3	2.1	2.1	4.1	4.7	10.2	8.0
1947.....	100.0	1.4	2.1	2.1	3.0	4.3	13.1	8.0
1948.....	100.0	1.4	2.1	2.1	3.0	4.2	14.2	7.0
Other manufacturing:								
1945.....	100.0	1.0	2.2	5.7	10.1	0.5	22.0	9.0
1946.....	100.0	1.1	2.3	6.1	10.4	10.0	25.0	9.0
1947.....	100.0	1.1	2.3	6.3	10.0	10.0	24.0	9.0
1948.....	100.0	1.1	2.4	6.1	9.7	9.4	21.8	9.4
Transportation, communication, and other public utilities:								
1945.....	100.0	1.0	2.1	3.0	4.7	3.7	10.1	5.2
1946.....	100.0	1.2	2.3	3.0	4.3	3.5	9.6	5.2
1947.....	100.0	1.2	2.3	3.0	4.3	3.4	9.6	5.1
1948.....	100.0	1.0	2.4	4.0	4.4	3.3	9.7	5.0
Wholesale trade:								
1945.....	100.0	2.4	10.6	17.5	17.3	11.1	18.1	5.4
1946.....	100.0	2.1	10.5	18.0	18.2	11.5	18.8	4.9
1947.....	100.0	2.4	10.8	18.0	18.0	11.4	18.3	4.8
1948.....	100.0	7.0	11.0	19.0	19.0	11.6	18.3	4.0
Retail trade:								
1945.....	100.0	13.2	16.6	16.0	11.2	5.4	0.3	3.3
1946.....	100.0	13.2	16.0	18.1	12.0	5.0	0.0	3.0
1947.....	100.0	13.0	15.5	18.0	11.9	5.0	0.0	3.0
1948.....	100.0	13.9	16.2	17.8	12.0	5.9	0.0	3.0
Finance, insurance, and real estate:								
1945.....	100.0	15.0	10.3	11.2	11.2	7.4	15.0	0.7
1946.....	100.0	14.4	10.7	12.4	10.2	7.1	15.8	7.2
1947.....	100.0	13.5	9.8	12.2	9.9	7.2	16.4	6.8
1948.....	100.0	13.0	9.8	12.1	9.9	7.3	15.7	6.0
Service industries:								
1945.....	100.0	14.3	12.0	15.4	10.0	12.4	17.5	4.4
1946.....	100.0	14.0	10.8	16.3	10.0	11.2	17.1	4.2
1947.....	100.0	14.0	10.7	17.0	10.0	10.0	16.0	3.8
1948.....	100.0	13.3	14.0	17.9	10.0	10.0	15.0	3.8

Note.—Detail will not necessarily add to totals because of rounding.

Source: U. S. Department of Commerce, Office of Business Economics, based on data in table 6.

First, between the first quarter of 1948 and the first quarter of 1949, sales of all manufacturers declined by 2 percent while sales of "large" manufacturers rose by 2 percent. In metals, sales of the "large" concerns rose 13 percent against an industry average of 2 percent, while for all other manufacturing industries, sales of the "large" concerns declined 3 percent in contrast to an industry decline of 6 percent. A similar divergent movement—though not so pronounced—is also apparent between the first two months of 1949 and 1950. Second, preliminary employment figures for an identical sample of very large manufacturers suggest a smaller drop in employment between March 1948 and 1949 than occurred in manufacturing generally. Cyclically this sort of development is not unexpected; the small firms in any industry are ordinarily the first to feel the pinch of the increased competition which accompanies an edging-off in demand.

Table 7.—Number of Firms in Operation by Industry and Size of Firm, March 31, 1945-48

(Thousands)

Industry	March 31, 1945										March 31, 1948									
	All size classes	Number of firms with—									All size classes	Number of firms with—								
		0-3 employees	4-7 employees	8-19 employees	20-49 employees	50-99 employees	100-499 employees	500-999 employees	1,000 or more employees	0-3 employees		4-7 employees	8-19 employees	20-49 employees	50-99 employees	100-499 employees	500-999 employees	1,000 or more employees		
All industries.....	2,219.1	2,461.1	582.3	233.3	97.5	33.3	26.4	3.2	2.9	3,516.8	2,985.4	485.4	296.6	112.0	37.5	27.0	9.1	2.3		
Mining and quarrying.....	21.1	12.4	4.4	2.9	2.3	.9	.9	.1	.1	32.0	18.0	4.9	4.8	2.5	.8	.9	.1	.1		
Contract construction.....	166.4	223.7	23.2	14.3	4.9	1.4	.8	.1	.1	228.6	182.9	37.9	25.6	9.2	2.8	1.2	.1	(1)		
Manufacturing.....	258.3	199.3	41.7	47.6	35.1	15.8	14.6	2.1	1.8	221.0	119.3	48.9	52.8	37.0	16.6	15.2	1.9	1.4		
Food and kindred products.....	36.1	12.8	0.8	7.9	4.5	2.0	1.0	.2	.2	36.3	12.7	6.9	7.9	4.8	2.0	1.8	.2	.1		
Textiles and textile products.....	26.5	0.0	4.9	6.5	6.4	2.6	3.2	.4	.2	40.4	6.2	5.6	8.9	9.3	5.2	3.6	.4	.3		
Leather and leather products.....	6.9	1.2	.7	1.1	1.9	.0	.6	.1	(1)	6.4	1.3	.8	1.2	1.1	.7	.7	.1	(1)		
Lumber and wood products.....	57.6	30.0	9.2	0.4	4.3	1.7	1.4	.1	(1)	57.4	37.0	10.4	10.6	5.2	2.0	1.6	.1	(1)		
Paper and allied products.....	3.6	.8	.4	.5	.3	.5	.8	.1	.1	3.9	.5	.3	.7	.8	.5	.6	.1	.1		
Printing and publishing.....	39.1	23.9	0.3	4.2	2.8	1.0	.9	.1	.1	41.5	24.1	7.1	5.4	3.0	1.0	.8	.1	.1		
Chemicals and allied products ¹	11.0	4.8	1.9	1.7	1.6	.9	.7	.1	.1	11.8	4.9	1.8	2.1	1.4	.7	.6	.1	.1		
Rubber products.....	1.1	.4	.1	.1	.1	.1	.1	(1)	(1)	1.2	.0	.1	.1	.1	.1	.1	(1)	(1)		
Stone, clay, and glass products.....	7.4	2.9	1.3	1.4	.9	.4	.4	.1	(1)	10.0	3.7	2.0	2.0	1.2	.5	.5	.1	.1		
Metals and metal products.....	42.2	8.2	7.0	9.2	7.5	4.0	4.2	.0	.0	43.9	14.0	7.8	10.9	7.7	4.0	4.4	.7	.7		
Other manufacturing ¹	10.5	8.0	3.2	2.5	2.3	1.0	.8	.1	.1	32.8	11.4	3.4	3.6	2.4	1.0	.7	.1	(1)		
Transportation, communication, and other public utilities.....	137.3	161.8	15.4	9.9	4.0	2.1	1.8	.3	.4	157.2	115.9	17.4	15.7	6.6	2.9	1.3	.9	.4		
Wholesale trade.....	150.9	89.4	21.5	22.9	9.1	2.5	1.2	.1	.1	179.1	93.5	37.9	28.9	11.5	3.2	1.0	.1	.1		
Retail trade.....	1,443.8	1,163.6	178.8	69.4	22.5	4.7	2.7	.2	.2	1,644.0	1,194.4	203.1	141.6	28.8	5.7	2.9	.3	.3		
General merchandise.....	71.4	52.4	10.9	5.0	1.9	.6	.6	.1	.1	73.2	53.0	11.4	5.2	1.8	.6	.6	.1	.1		
Food and liquor.....	443.6	302.0	30.2	11.2	3.4	.6	.6	.1	.1	460.8	400.9	41.3	13.3	3.0	.7	.6	.1	.1		
Automotive.....	40.9	20.1	30.3	7.8	2.3	.4	.1	(1)	(1)	40.0	31.2	12.4	11.5	4.1	.6	.1	(1)	(1)		
Apparel and accessories.....	32.1	18.8	12.9	7.3	2.4	.9	.6	(1)	(1)	37.0	22.7	14.3	8.0	2.6	.8	.5	(1)	(1)		
Eating and drinking places.....	281.0	193.4	51.0	20.0	3.3	1.3	.6	(1)	(1)	293.0	193.3	58.0	32.4	8.0	1.5	.6	(1)	(1)		
Filling stations.....	194.9	180.0	7.1	1.5	.3	(1)	(1)	(1)	(1)	210.7	183.4	12.3	2.8	.4	.1	.1	(1)	(1)		
Other retail trade.....	319.0	241.4	50.1	23.7	5.1	1.0	.5	(1)	(1)	383.0	267.6	58.0	28.1	6.8	1.4	.6	(1)	(1)		
Finance, insurance, and real estate.....	224.0	272.8	22.1	13.7	5.4	1.5	1.1	.1	.1	334.6	276.3	32.9	16.9	6.6	1.7	1.3	.1	.1		
Service industries.....	699.8	691.9	68.2	30.5	12.4	4.2	2.2	.2	.1	755.9	625.6	71.1	38.1	14.2	4.4	2.5	.2	.1		
Hotels and other lodging places.....	75.0	82.3	0.5	3.8	1.7	.8	.7	(1)	(1)	76.0	80.9	7.2	4.5	1.9	.8	.3	(1)	(1)		
Personal services.....	377.8	338.6	22.8	9.7	4.4	1.7	.8	(1)	(1)	393.3	349.9	28.6	11.3	4.9	1.8	.8	(1)	(1)		
Business services.....	57.7	42.3	7.8	4.4	2.1	.7	.3	(1)	(1)	67.2	47.9	9.6	6.0	2.3	.7	.4	(1)	(1)		
Automobile repair.....	67.1	54.6	8.2	3.1	.5	.1	(1)	(1)	(1)	60.2	60.7	13.2	5.2	.9	.1	(1)	(1)	(1)		
Miscellaneous repair.....	66.0	60.4	4.1	1.8	.4	.1	(1)	(1)	(1)	62.0	73.6	5.9	2.7	.6	.1	(1)	(1)	(1)		
Motion pictures.....	11.7	3.8	2.9	2.2	1.3	.3	.2	(1)	(1)	12.1	3.6	3.0	2.3	1.4	.4	.2	(1)	(1)		
Other amusements.....	41.7	28.2	5.4	4.5	2.0	.6	.1	(1)	(1)	44.2	29.5	6.4	5.1	2.4	.6	.2	(1)	(1)		

See footnotes on page 19.

Comparison with prewar

It was not possible to prepare both size and industry distributions for the prewar period comparable to the postwar distributions, so that only tentative conclusions maybe drawn regarding changes over the past decade or so. Although an earlier SURVEY article showed an estimated firm and employment size distribution for the year 1939, the lack of comparability with the estimates shown here is sufficient to invalidate a direct comparison of the figures.⁴

There is available from the BOASI, however, data on the estimated number of firms and employment by size class for all industries combined as of September 1940. These estimates were based on tabulations containing about 84 percent of the estimated total number of firms and about 95 percent of the estimated total employment and are not as accurate as the postwar BOASI data.

Between September 1940 and March 1948 it would appear that employment among firms with 1,000 or more workers rose by 41 percent, in contrast to a rise of 24 percent in total employment covered by the business population. The number of firms in operation in this category rose by about 25 percent, or somewhat more than the 19 percent over-all advance in the business population. However, concentration as measured by a Lorenz curve—which takes into account the complete size distribution of firms and employment—does not show any marked increase for industry generally over this period. It should be noted, moreover,

that manufacturing, especially the durable goods industries, where most of the large concerns are located, has undergone a more pronounced increase in employment than nonmanufacturing over this period. Consequently, it is not possible to draw any conclusions about changes in concentration within industries from these data.

Comparison of identical manufacturing companies

A second comparison was based on a sample of approximately 100 identical firms which were among the 200 largest manufacturing corporations—ranked according to size of total assets—in 1939 and 1946; there were 170 concerns common to both lists. Unlike what has preceded these are parent companies, ordinarily including all subsidiaries. The companies chosen were those for whom employment figures could be obtained for 1940 and 1948. For these concerns the rise in employment was not much different from the average increase for all manufacturing employment as indicated by Bureau of Labor Statistics data. It is realized that the latter figures are on an establishment basis whereas the identical companies have employment cutting across many nonmanufacturing industries. Nonetheless the evidence does not suggest that the share of employment among the very largest manufacturing concerns has changed appreciably from the prewar period, though these firms do account for a smaller proportion of the total number of manufacturers in view of the marked increase in the business population since that time.

⁴ "The Business Population in Wartime," SURVEY, May 1944. The sources and methods used in estimating the size distribution of firms, in particular, were quite different from those used here. See also "The Industrial Concentration of Employment," SURVEY, April 1948.

Table 7.—Number of Firms in Operation by Industry and Size of Firm, March 31, 1945-49—Continued

(Thousands)

Industry	Mar. 31, 1947									Mar. 31, 1949								
	Number of firms with—									Number of firms with—								
	All size classes	0-3 em- ploy- ees	4-7 em- ploy- ees	8-19 em- ploy- ees	20-49 em- ploy- ees	50-99 em- ploy- ees	100-499 em- ploy- ees	500-999 em- ploy- ees	1,000 or more em- ploy- ees	All size classes	0-3 em- ploy- ees	4-7 em- ploy- ees	8-19 em- ploy- ees	20-49 em- ploy- ees	50-99 em- ploy- ees	100-499 em- ploy- ees	500-999 em- ploy- ees	1,000 or more em- ploy- ees
All industries.....	3,834.7	2,858.3	408.8	391.1	118.9	39.7	28.6	3.3	3.1	3,956.8	2,945.3	506.0	399.5	121.4	39.0	28.7	3.3	3.1
Mining and quarrying.....	31.4	18.7	8.2	4.7	2.6	1.0	1.0	.1	.1	34.4	18.1	8.0	5.4	2.7	1.1	1.0	.1	.1
Contract construction.....	289.6	191.4	46.2	29.0	10.2	2.9	1.0	.1	.1	313.4	210.6	62.1	33.8	11.6	3.3	1.9	.1	.1
Manufacturing.....	330.8	147.9	61.3	57.3	37.9	16.3	15.4	2.0	1.8	329.3	146.6	62.1	58.6	37.9	16.8	15.3	2.0	1.8
Food and kindred products.....	37.8	14.1	7.2	8.0	4.7	1.9	1.0	.2	.2	38.1	12.6	7.3	8.0	4.6	1.8	1.8	.2	.1
Textiles and textile products.....	44.8	11.8	6.0	9.3	9.0	4.3	3.6	.4	.3	43.5	10.0	6.7	9.1	9.2	4.3	3.6	.4	.3
Leather and leather products.....	6.9	2.5	.8	1.2	1.0	.0	.7	.1	(0)	6.7	2.4	.8	1.1	1.0	.0	.7	.1	(0)
Lumber and lumber products.....	86.1	48.7	12.6	12.7	8.0	2.3	1.7	.1	.1	84.4	48.8	13.1	12.4	8.9	2.8	1.7	.1	.1
Lumber and timber basic products.....	72.3	44.6	10.8	10.6	4.6	1.6	1.1	.1	(0)	71.4	44.6	11.2	10.2	4.6	1.7	1.1	.1	(0)
Furniture and finished lumber products.....	10.8	4.1	1.8	2.2	1.4	.8	.0	.1	(0)	11.0	4.1	1.0	2.2	1.5	.7	.0	.1	(0)
Paper and allied products.....	4.3	1.1	.4	.7	.9	.5	.0	.1	.1	4.2	1.1	.4	.7	.8	.5	.0	.1	.1
Printing and publishing.....	44.8	28.0	7.3	6.8	3.1	1.1	.9	.1	.1	46.5	29.0	7.3	6.9	3.1	1.2	.0	.1	.1
Chemicals and allied products.....	12.2	8.3	1.0	2.1	1.4	.7	.8	.1	.1	11.7	4.7	1.9	2.2	1.4	.6	.0	.1	.1
Chemicals and allied products.....	10.9	4.5	1.7	2.0	1.3	.8	.6	.2	.1	10.4	4.0	1.8	2.0	1.3	.8	.5	.1	.1
Products of petroleum and coal.....	1.4	.7	.2	.2	.1	.1	.1	(0)	(0)	1.3	.7	.1	.2	.1	.1	(0)	(0)	(0)
Rubber products.....	1.4	.8	.1	.1	.1	.1	.1	(0)	(0)	1.5	.8	.1	.2	.1	.1	(0)	(0)	(0)
Stono, clay, and glass products.....	13.2	6.1	2.5	2.2	1.2	.6	.5	.1	.1	12.5	6.0	2.4	2.1	1.2	.5	.0	.1	.1
Metals and metal products.....	57.2	18.4	8.0	11.2	8.3	4.2	4.0	.8	.8	58.6	20.0	9.4	11.1	8.2	4.1	4.4	.7	.8
Primary metals.....	5.2	1.7	.7	1.1	1.1	.6	.7	.1	.1	5.3	1.6	.7	1.1	1.0	.6	.7	.1	.1
Fabricated metals.....	17.4	6.4	2.9	3.6	2.0	1.2	1.3	.2	.1	18.0	6.0	2.1	3.1	2.0	1.3	1.2	.2	.1
Machinery except electrical.....	18.6	4.7	8.4	4.3	2.0	1.3	1.6	.2	.2	19.1	6.6	3.6	4.2	2.7	1.3	1.4	.2	.2
Electrical machinery.....	4.9	1.5	.6	.8	.7	.4	.6	.1	.1	4.9	1.7	.6	.8	.7	.4	.5	.1	.1
Transportation equipment.....	6.8	2.7	.7	.6	.7	.3	.4	.1	.1	6.7	3.4	.8	.8	.7	.8	.4	.1	.1
Professional, scientific and control- ling instruments.....	2.4	1.3	.6	.6	.4	.2	.2	(0)	.1	2.6	1.5	.6	.6	.4	.2	.2	(0)	(0)
Other manufacturing ¹	25.4	13.7	8.8	3.9	2.3	.9	.7	(0)	(0)	24.5	12.9	8.7	3.0	2.2	.9	.7	.1	.1
Transportation, communication and other public utilities.....	179.9	139.4	10.0	13.4	5.9	2.1	1.9	.3	.4	180.5	140.0	19.1	13.6	6.0	2.1	1.0	.3	.4
Wholesale trade.....	194.4	163.5	41.4	31.7	12.8	3.4	1.7	.1	.1	201.4	169.3	42.3	32.6	12.8	3.4	1.8	.1	.1
Retail trade.....	1,656.6	1,229.8	221.4	167.2	28.4	6.1	3.0	.3	.3	1,764.2	1,312.1	226.3	179.3	29.3	6.2	3.1	.3	.3
General merchandise.....	78.6	60.0	11.2	8.2	1.0	.6	.8	.1	.2	78.8	60.0	11.2	8.2	2.0	.6	.7	.1	.2
Food and liquor.....	484.3	426.7	41.0	13.8	3.0	.7	.6	.1	.1	482.8	434.3	40.8	13.2	3.1	.7	.8	.1	.1
Automotive.....	71.9	57.8	14.3	13.5	6.1	.9	.2	(0)	(0)	77.9	60.0	15.1	14.0	6.0	1.1	.2	(0)	(0)
Apparel and accessories.....	62.3	45.3	14.0	8.3	2.8	.8	.5	(0)	(0)	65.4	48.4	14.3	8.4	2.8	.8	.5	(0)	(0)
Eating and drinking places.....	217.4	213.7	61.3	39.8	7.6	1.4	.5	(0)	(0)	224.0	222.6	62.4	31.1	7.0	1.3	.5	(0)	(0)
Filling stations.....	250.6	239.8	14.1	3.0	.4	.1	(0)	(0)	(0)	250.3	241.2	14.0	3.1	.4	.1	(0)	(0)	(0)
Other retail trade.....	287.8	252.8	64.1	30.9	7.0	1.6	.8	(0)	(0)	290.1	259.1	65.0	32.5	8.0	1.6	.7	(0)	(0)
Finance, insurance and real estate.....	343.7	284.1	32.0	17.6	5.6	1.0	1.4	.2	.1	345.6	285.0	33.0	18.2	5.9	1.9	1.4	.3	.1
Service industries.....	221.5	184.5	74.8	46.1	14.9	4.5	2.6	.2	.1	222.8	171.5	77.1	42.1	15.1	4.4	2.4	.2	.1
Hotels and other lodging places.....	78.0	62.8	7.4	4.4	1.5	.6	.7	.1	(0)	78.3	62.9	7.6	4.6	1.8	.8	.7	.1	(0)
Personal services.....	410.9	370.6	20.8	11.7	5.0	1.9	.4	(0)	(0)	428.3	383.0	20.6	11.6	5.0	1.6	.8	(0)	(0)
Business services.....	70.8	54.2	11.0	6.9	2.8	.9	.4	(0)	(0)	80.7	57.8	11.0	7.4	2.7	.7	.4	(0)	(0)
Automobile repair.....	92.2	72.0	18.7	4.4	.9	.1	(0)	(0)	(0)	95.4	75.7	13.3	5.3	.9	.1	(0)	(0)	(0)
Miscellaneous repair.....	96.0	83.6	6.6	2.9	.6	.1	(0)	(0)	(0)	104.0	84.4	6.7	2.8	.6	.1	(0)	(0)	(0)
Motion pictures.....	12.7	4.1	4.0	3.4	1.6	.4	.3	(0)	(0)	13.2	4.3	3.1	3.7	1.6	.4	.2	(0)	(0)
Other amusements.....	47.0	32.3	6.4	6.2	2.6	.6	.3	(0)	(0)	52.4	34.4	8.4	6.5	2.6	.5	.2	(0)	(0)

¹ Less than 50.² Includes products of petroleum and coal.³ Includes tobacco and miscellaneous manufactures.

NOTE.—Detail will not necessarily add to totals because of rounding.

TECHNICAL NOTES

The sources of data and methods employed in the construction of business population estimates for all size classes combined were discussed in the technical notes to the article, "Revised Estimates of the Business Population," which appeared in the June 1949 issue of the Survey. The size distributions of the number of firms in operation as of March 31, 1945-48 were estimated within this framework primarily on the basis of data furnished by the Bureau of Old-Aged and Survivors Insurance, showing estimated number of employees by size class and detailed industry. As a result of the procedure followed, the data with less than four employees contain an estimate of firms having no paid employees, though such concerns are not covered by the BOASI data. Since in most major industry divisions a substantial number of companies operate without paid employment, this bottom size class (including the 0-group) is subject to larger errors of estimate than the other groups. The BOASI data were supplemented by information obtained from the Interstate Commerce Commission and the Railroad Retirement Board on the size distribution of firms operating interstate railroads and certain related companies not covered by the Social Security Act.

In each year BOASI provided a global estimate of employment for all industries and size classes as of March. The business population estimate of employment represents the BOASI total less employment in those industries not in the business population universe (most as professional services), less employment in Alaska and Hawaii, plus employment in industries not covered by the BOASI program—chiefly railroads. Railroad and related employment represent annual averages rather than the March level each year.

It should be noted that in the business population statistics, each firm is classified by size according to the total employment of the firm and by industry according to the major activity of the firm as a whole. As a result, the size distributions presented here will not necessarily

agree with distributions based on data in which size or industry classifications have been made on an establishment basis.

The estimates of employment by size of firm and industry for every year include complete data for firms with 10,000 or more employees. For all other size classes, estimates of employment within each detailed industry and size class for each year were prepared from the estimated number of firms in operation and the average number of employees per firm. Averages of the number of employees per firm were derived from preliminary BOASI tabulations for the first quarters of 1947 and 1948; in 1947, 5 percent of the firms and less than 3 percent of the employment were not included in these tabulations, and in 1948, less than 1 percent of the firms and employment were missing.

While in 1947 and 1948 an industry breakdown of employment by size was provided by BOASI, in 1946 and 1945 only a size breakdown for all industries combined was obtainable. As already mentioned, the number of firms in each size class and industry was also available. In each detailed industry and size class, the average number of employees per firm was obtained from the 1947-48 statistics. These averages were then multiplied by the estimated number of firms in each detailed industry and size category for 1945 and 1946 to yield a first approximation of total employment in each cell.

For each size class these initial estimates of employment by industry were summed and were then corrected to BOASI estimates of total employment within the size class; the adjustments did not exceed a few percentage points in either year. A final adjustment in each size class was made to include employment covered by the Railroad Retirement Board. In addition, in 1946, the largest size class includes employment estimates for three very large firms whose employment was abnormally low because of strikes.

The basic data underlying size estimates of new and discontinued business also come from the BOASI. A description of methods used may be found in the technical notes in the June 1949 article mentioned above.

Table 8.—Paid Employment by Industry Division and Size of Firm, March 31, 1945-48

[Thousands]																											
Industry	Firms with—									All size classes	Firms with—									All size classes							
	All size classes										All size classes																
		0-3 employees	4-7 employees	8-10 employees	20-49 employees	50-99 employees	100-499 employees	500-999 employees	1,000 or more employees			0-3 employees	4-7 employees	8-10 employees	20-49 employees	50-99 employees	100-499 employees	500-999 employees	1,000 or more employees								
March 31, 1945																											
All industries.....	33,752	1,721	1,909	2,642	2,994	2,274	5,265	2,242	14,734	33,406	1,936	2,372	3,348	3,389	2,659	6,536	2,171	12,366	33,406	1,936	2,372	3,348	3,389	2,659	6,536	2,171	12,366
Mining and quarrying.....	798	16	23	49	70	61	200	78	302	829	16	20	58	79	65	198	51	319	798	16	23	49	70	61	200	78	302
Contract construction.....	1,079	106	119	167	148	97	162	83	228	1,483	139	197	383	274	172	234	49	122	1,079	106	119	167	148	97	162	83	228
Manufacturing.....	16,901	143	222	690	1,087	1,491	3,080	1,432	9,358	16,443	111	246	661	1,150	1,162	3,146	1,316	8,862	16,901	143	222	690	1,087	1,491	3,080	1,432	9,358
Metals and metal products.....	8,627	16	37	112	239	284	964	827	6,228	8,653	18	41	128	249	279	947	471	5,738	8,627	16	37	112	239	284	964	827	6,228
Other manufacturing.....	8,274	97	185	478	948	907	2,080	865	3,073	8,780	93	205	533	910	874	2,199	844	3,124	8,274	97	185	478	948	907	2,080	865	3,073
Transportation, communication and other public utilities.....	3,800	43	80	116	180	144	300	202	2,491	3,902	71	91	144	170	149	277	208	2,751	3,800	43	80	116	180	144	300	202	2,491
Wholesale trade.....	1,602	115	184	274	270	172	230	55	240	1,602	123	190	349	347	230	205	92	242	1,602	115	184	274	270	172	230	55	240
Retail trade.....	5,800	744	918	931	851	316	620	103	1,430	5,904	888	1,063	1,178	778	327	489	108	1,430	5,800	744	918	931	851	316	620	103	1,430
Finance, insurance, and real estate.....	1,438	224	148	101	101	108	224	97	317	1,521	223	108	200	100	119	280	116	388	1,438	224	148	101	101	108	224	97	317
Service industries.....	2,313	330	296	357	370	298	406	102	189	2,585	276	309	440	427	300	480	112	192	2,313	330	296	357	370	298	406	102	189
March 31, 1947																											
All industries.....	35,764	2,104	2,463	3,518	3,694	2,617	6,724	2,278	13,485	36,450	2,201	2,684	3,860	3,682	2,684	6,713	2,287	13,749	35,764	2,104	2,463	3,518	3,694	2,617	6,724	2,278	13,485
Mining and quarrying.....	840	16	27	50	76	58	308	83	327	893	17	38	86	82	77	280	89	358	840	16	27	50	76	58	308	83	327
Contract construction.....	1,823	178	211	339	301	196	311	86	167	2,033	106	267	384	348	224	331	101	207	1,823	178	211	339	301	196	311	86	167
Manufacturing.....	18,073	127	289	987	1,100	1,186	3,878	1,342	7,686	18,379	139	274	703	1,159	1,148	3,142	1,371	7,923	18,073	127	289	987	1,100	1,186	3,878	1,342	7,686
Food and kindred products.....	1,421	17	38	98	141	130	311	104	563	1,404	17	38	98	130	120	312	108	625	1,421	17	38	98	141	130	311	104	563
Textiles and textile products.....	2,478	18	32	117	227	284	702	270	778	2,508	14	31	110	280	201	726	295	820	2,478	18	32	117	227	284	702	270	778
Lumber and wood products.....	412	2	4	15	31	49	147	44	129	423	2	4	14	31	38	151	44	139	412	2	4	15	31	49	147	44	129
Lumber and wood products.....	1,143	27	66	160	179	186	310	98	147	1,140	28	69	148	178	167	320	97	136	1,143	27	66	160	179	186	310	98	147
Lumber and timber base products.....	616	29	57	120	136	112	107	81	101	602	23	50	120	130	112	202	82	84	616	29	57	120	136	112	107	81	101
Furniture and related products.....	328	5	8	27	44	44	119	38	40	344	5	10	27	45	45	124	35	64	328	5	8	27	44	44	119	38	40
Paper and allied products.....	604	1	2	9	37	37	117	54	218	603	1	2	9	26	34	120	63	222	604	1	2	9	37	37	117	54	218
Printing and publishing.....	710	20	35	70	92	75	100	79	100	783	21	38	72	94	79	172	72	185	710	20	35	70	92	75	100	79	100
Chemicals and allied products.....	1,017	5	10	30	44	46	130	72	684	1,006	6	10	27	53	44	126	68	772	1,017	5	10	30	44	46	130	72	684
Chemicals and allied products.....	604	5	9	24	40	40	108	63	400	744	6	9	24	39	38	103	64	435	604	5	9	24	40	40	108	63	400
Products of petroleum and coal.....	323	(1)	1	2	4	6	26	9	276	361	(1)	1	2	4	6	26	9	307	323	(1)	1	2	4	6	26	9	276
Rubber products.....	300	(1)	1	2	5	6	27	30	240	293	(1)	1	2	4	5	30	22	234	300	(1)	1	2	5	6	27	30	240
Stone, clay and glass products.....	619	0	13	27	87	30	116	38	224	629	7	12	25	37	38	110	68	239	619	0	13	27	87	30	116	38	224
Metals and metal products.....	8,614	23	40	138	287	287	807	527	4,337	8,619	28	40	123	234	276	927	406	4,367	8,614	23	40	138	287	287	807	527	4,337
Primary metals.....	1,311	1	3	13	33	43	162	107	865	1,296	2	4	13	33	42	162	80	870	1,311	1	3	13	33	43	162	107	865
Fabricated metals.....	1,003	5	15	44	80	80	262	125	382	1,034	8	10	44	80	86	244	201	1,003	1,003	5	15	44	80	80	262	125	382
Machinery except electrical.....	1,500	8	18	53	90	90	332	180	890	1,530	10	19	52	81	87	299	140	837	1,500	8	18	53	90	90	332	180	890
Electrical machinery.....	1,041	1	8	19	20	20	131	73	783	1,012	2	3	10	21	23	106	60	778	1,041	1	8	19	20	20	131	73	783
Transportation equipment.....	1,424	2	4	10	21	22	69	50	1,200	1,397	2	4	11	21	22	78	44	1,210	1,424	2	4	10	21	22	69	50	1,200
Professional, scientific and controlling instruments.....	275	2	3	8	13	14	47	24	105	274	2	3	8	12	14	48	22	108	275	2	3	8	13	14	47	24	105
Other manufacturing.....	505	12	20	48	70	61	142	58	100	578	21	22	47	68	60	141	67	173	505	12	20	48	70	61	142	58	100
Transportation, communication and other public utilities.....	4,145	76	95	168	177	182	398	211	3,687	4,123	80	90	163	160	146	399	207	3,882	4,145	76	95	168	177	182	398	211	3,687
Wholesale trade.....	1,960	146	214	278	387	228	323	84	216	1,985	143	210	289	377	231	324	93	268	1,960	146	214	278	387	228	323	84	216
Retail trade.....	6,821	838	1,125	1,231	811	487	879	201	1,648	7,018	995	1,139	1,247	836	418	831	207	1,601	6,821	838	1,125	1,231	811	487	879	201	1,648
General merchandise.....	7,301	61	67	62	68	43	133	77	691	1,423	63	66	61	60	42	138	74	810	7,301	61	67	62	68	43	133	77	691
Food and liquor.....	1,261	240	207	182	84	61	103	47	369	1,278	247	282	148	90	40	161	62	381	1,261	240	207	182	84	61	103	47	369
Automotive.....	539	30	78	104	145	39	38	1	16	502	58	79	181	171	72	33	1	16	539	30	78	104	145	39	38	1	16
Apparel and accessories.....	600	60	78	104	145	39	38	1	16	574	64	72	109	81	60	100	82	600	600	60	78	104	145	39	38	1	16
Eating and drinking places.....	1,389	204	315	375	210	91	87	18	63	1,334	218	319	367	198	83	79	12	70	1,389	204	315	375	210	91	87	18	63
Filling stations.....	239	102	69	32	11	4	5	1	6	240	110	71	23	10	4	6	1	6	239	102	69	32	11	4	5	1	6
Other retail trade.....	1,609	233	228	368	210	101	121	33	119	1,678	243	339	370	220	108	131	30	120	1,609	233	228	368	210	101	121	33	119